ELEGANT

Enhancing Teaching, Learning and Graduate Employability through University-Enterprise Cooperation

Enhancing IT Graduates Employability through Skills Development & Curricular Innovation

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Introduction

This presentation is divided into two parts:

a) The first is an abridged presentation of the Bachelor and Graduate Programs in Informatics and Automation Engineering, at the Faculty of Engineering, Università Politecnica delle Marche. The material is courtesy of Prof. Gianluca Ippoliti, President of the Courses;

b) The second is a brief description of the UNIVPM offices and programs dealing with internships and placement

orientamento @UNIVPM

Diventare INGEGNERE INFORMATICO e DELL'AUTOMAZIONE

Presentazione del Corso di Laurea

Facoltà di Ingegneria - Università Politecnica delle Marche – www.univpm.it

Prof. Gianluca Ippoliti
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What skills will be acquired?

Learning objectives

- **Analysis, design and management of:**
  - **hardware/software systems** (for example, corporate information systems, systems for the automation of services, systems and applications based on the Internet and on the World Wide Web, data analysis systems, infrastructures for the web)
  - **systems that operate in conditions of autonomy** (for example robotic systems, of land, sea and air navigation, automatic systems for the production and management of goods, services and environmental resources)
  - **robotics and Intelligent machines:** combination of robotics, sensors, cloud computing and artificial intelligence algorithms business transformation according to the Industry 4.0 paradigm
- **Knowledge of:**
  - **business contexts and related economic-managerial-organizational aspects**
  - **optimization methods to formulate and solve decision problems**

What are the possible areas of work?

Career opportunities

All those companies where it is necessary

- the management of IT and/or automation systems
- the development of functions for the design, sizing and implementation of IT and/or automation architectures, even of medium/large complexity

Ad esempio:

What are the possible areas of work?

Career opportunities

- Software Designer and Analyst in Software House;
- Designer and Administrator of Data Centers and IT Networks;
- Head of Information Systems in Manufacturing Companies, Services, Public Administrations;
- Designer and Administrator of Automatic Systems, Processes and Plants for Automation;
- Designer and Administrator of Technologies for eLiving and the Environment;
- Expert in Data Analysis, Knowledge Extraction from Data
- Robotic Systems Designer and Developer.

How is the study program structured?

Course of Study in Informatics and Automation Engineering

Percorso Formativo Completo

Bachelor's Degree

Master's Degree

How is the Bachelor's Degree structured?

Bachelor's Degree in Informatics and Automation Engineering

- **20 courses** (~ **7 courses** per year) + **Internship** (in a firm or in the University lab) **and Thesis**
- **Lessons are divided in two semesters** (october/december; march/may), of **12 weeks each**
- In each semester **3 or 4 courses (~ 18-24 hours of weekly lessons)**
- **7 exam sessions per academic year**

Subjects

- **Informatics e Automation (+ internship and thesis): ~53%**
- ICT (Telecomunications, Electrical engineering and electronics) : ~ 14%
- Matemathics: ~ 15%
- Physics: ~8 %
- Economics, Operational Research, Foreign Language : ~10 %

How much Informatics and how much Automation?

Informatics: 50%	Automation: 50%

Informatics: ~ 72%	Automation: ~ 28%

Informatics: ~ 28%	Automation: ~ 72%

Key subjects of Informatics Engineering

- Fundamentals of Informatics
- Object-oriented Programming
- Operating Systems
- Databases
- Software Engineering
- Computer Architectures and Cloud Computing
- Mobile Programming
- Web Technologies

Key Subjects of Automation Engineering

- Fundamentals of Automation
- Automation Controls
- Automation and Robotics Technologies
- Industrial Automation
- Automation Lab
- Modeling and Identification of Dynamic Processes
- Computer aided design of Control Systems
- Automation Methods and Techniques

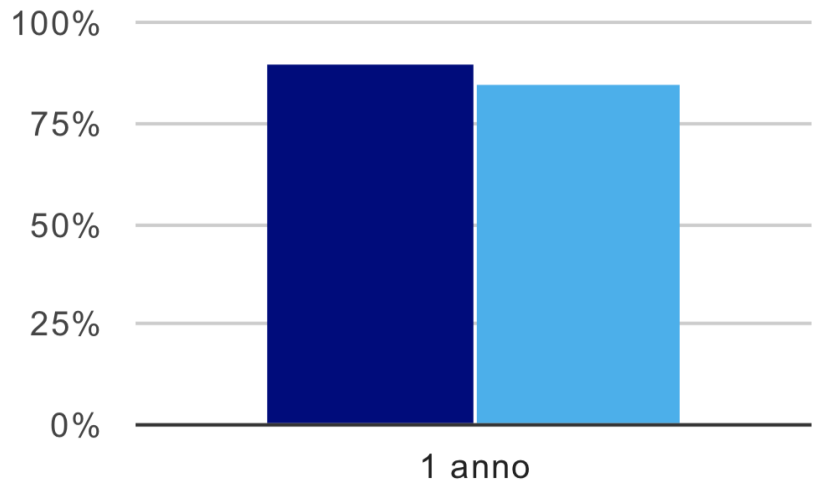
And after the Bachelor?

Bachelor's Degree in Informatics and Automation Engineering

Most of the graduates (90%) enroll in a Masters' Degree course

Source: Almalaurea, Condizione occupazionale dei **laureati del 2017** **ad 1 anno dalla laurea**

Laureati attualmente iscritti ad un corso di laurea magistrale(2)



	1 anno
corso	90,0%
classe totale atenei	85,1%

Diventare INGEGNERE INFORMATICO e DELL'AUTOMAZIONE

Presentazione del Corso di Laurea Magistrale

Facoltà di Ingegneria - Università Politecnica delle Marche – www.univpm.it

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How is the study program structured?

Master's Degree in Informatics and Automation Engineering

- **Entry** with the Bachelor Degree
- **Deepens the skills** acquired in the Bachelor's degree in the key fields of Informatics and Automation Engineering
- Grant a **high level of professionalism**
- **2 years** (divided in **semesters**)
- **12 courses** (~ **6 exams** per year) + **Internship** (firm or University Lab) **and Thesis**

Study Plan

- **Informatics e Automation (+ internship and thesis): ~87%**
- Economics, Operational research, Foreign Language (Advanced) ~13%

How much Informatics and how much Automation?

Informatics: 50%	Automation: 50%

Informatics: ~ 98%	Automation: ~ 2%

Informatics: ~ 2%	Automation: ~ 98%

Key Subjects of Informatic Engineering

- Project Management for ICT
- Advanced Programming
- Big Data Analytics e Machine Learning
- Artificial Intelligence
- Software Cybersecurity
- Programming Languages
- Dedicated Operating Systems
- Computer Graphics e Multimedia
- Data Science
- Advanced Cybersecurity for IT
- New Generation Databases
- Computer Vision e Deep Learning

Key subjects of Automation Engineering

- Non Linear Control
- Dynamics and Control of Intelligent Robots and Vehicles
- Control Systems Design
- Preventive Maintenance for Robotics and Intelligent Automation
- Drives for Automation and Robotics
- Mechatronics Laboratory
- Automation Systems
- Mechanics of Automatic Machines

Internationalization

Study Trips
The professors of the degree courses organize study trips in Italy and abroad

Study Abroad
Students can choose among more than **200 Universities worldwide, to spend a period abroad** (**from 1 to 12 mesi**)
with a scholarship (es. **Erasmus**+)

Thesis abroad
Opportunities to work on the thesis in a foreign institution with a scholarship

Internships abroad
During the study period and after graduation it is possible to have an internship in a foreign company financed with EU Erasmus Traineeship and a specific UNIVPM program (Campus World)

INTERNSHIPS AND JOB PLACEMENT

Job orientation services

UNIVPM helps graduates to find a job through two dedicated services:

1. Internship Offices
2. Placement Office

INTERNSHIPS AND JOB PLACEMENT

Internship Offices

At UNIVPM internships are part of the of the study plan both at the undergraduate and graduate levels.

Internships are a primary source for students to find a job because they have the opportunity to make themselves known and appreciated by the company.

UNIVPM has Internship Offices organized at the Faculty level to help students to find an internship in Italy.

In addition the International Office manages the Erasmus Traineeship and the «Campus World» Programs. Both programs offer scholarships for internships abroad, either in a foreign company or in an subsidiary of an Italian company abroad

INTERNSHIPS AND JOB PLACEMENT

Job Placement Office

The Job Placement Office is the structure responsible for accompanying students and graduates to work

It provides students, graduates and companies with a series of services to facilitate the matching of job offer/demand.

In particular, it provides the following services:

- manage an IT platform for the matching of job demand and offer aimed at university undergraduates and graduates;
- organize corporate presentation events, meetings and job orientation seminars;
- collaborate in the organization of events such as Career Day and YFF;
- coordinate activities related to internships, in collaboration with other University structures (extra-curricular and Framework Agreements in collaboration with the Didactic Structures / Faculty, hosted internships, school-work alternation, CRUI);
- ensure compliance with legal obligations related to the intermediation of the labor market;
- manage internal and external communication, maintain contacts with stakeholders, offer advice on active employment policy measures (eg. Higher training and research apprenticeship)

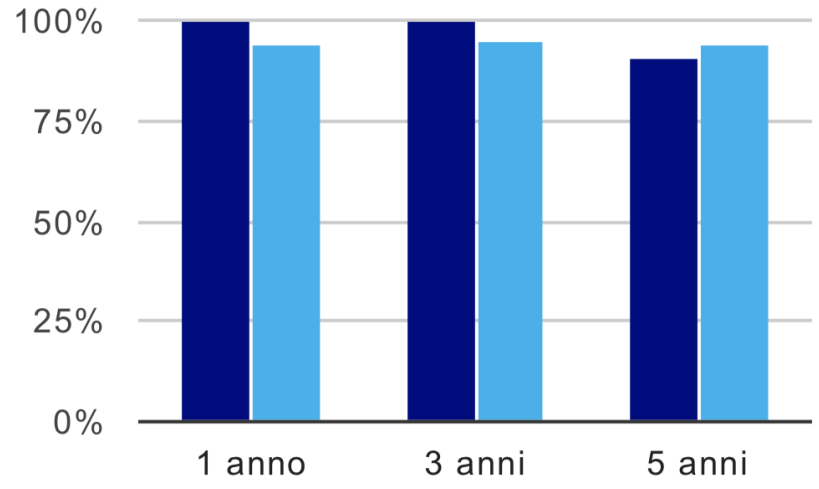
INTERNSHIPS AND JOB PLACEMENT

Master's Degree in Informatics and Automation Engineering

Employment rate at 1, 3 and 5 years from graduation

Source: Almalaura, Condizione occupazionale dei laureati del 2017, 2015, 2013

Tasso di occupazione(1)



	1 anno	3 anni	5 anni
corso	100,0%	100,0%	90,9%
classe totale atenei	94,1%	94,6%	94,3%